

REMARKS

Claims 1-16 continue to be pending in this patent application.

AMENDMENTS TO CLAIMS

In this paper, claims 1-16 have been amended. All of the claims have been amended to employ language that accords with accepted practice for claims in U.S patent applications. As discussed below, other amendments made to the claims provide clearer recitations of the claimed subject matter.

The amendments to the claims made herein present new issues for consideration by the Examiner. Applicant therefore submits that the next Office Action in this application would not properly be a Final Rejection.

SECTION 112, 2ND PARAGRAPH, REJECTION

Claims 15 and 16 were rejected under 35 USC § 112, second paragraph, as being indefinite. (This rejection is stated on pages 14-15 of the outstanding Final Office Action.) Applicant traverses this rejection insofar as it might be deemed applicable to claims 15 and 16 as now presented.

Claim 15 has been amended to depend from claim 3. Also, claims 15 and 16 have been amended to eliminate expressions without clear antecedent bases and otherwise clarify the recitation of the claimed subject matter.

In view of the amendments to claims 15 and 16 made herein, Applicant submits that claims 15 and 16 are in full compliance with the requirements of 35 USC § 112, second paragraph. Applicant therefore requests that this rejection be withdrawn.

PRIOR ART REJECTION I

Claims 1, 2, 7-9 and 11 were rejected under 35 USC § 103(a) as being unpatentable over US 4561904 (Eberhardt) in view of US 4336279 (Metzger). Applicant traverses this rejection.

Without acquiescing in the rejection, Applicant has amended 1 to recite nozzles for blowing hot air into the drying zone and nozzles in the washing zone. Claim 1 has also been amended to specify that flow can be regulated from at least one of (1) the nozzles for blowing

hot air into the drying zone and (2) the nozzles in the washing zone. That is, claim 1 now positively recites elements that contribute to the flow of an exhaust-air stream that is counter to the transporting direction of the wash ware through the dishwasher. Support for the amendments to claim 1 can be found in original drawing Fig. 1 and in the original specification on page 11, lines 13-31.

In Applicant's disclosed and claimed dishwasher, the flow of the exhaust-air stream in a direction counter to the transporting direction of the wash ware in the dishwasher yields several advantages. The direction of flow is from warmer regions toward cooler regions, whereby the energy content of the moist air stream is applied advantageously to advancing wash ware and is dissipated. As a result, less cooling is required before the air is exhausted from the interior to the exterior of the dishwasher. The flow occurs from cleaner to less clean regions inside the dishwasher, so that wash ware that has been cleaned is not subjected to contamination from the exhaust-air stream. Also, the direction of the flow pulls hot moist air away from the inlet and outlet of the dishwasher, preventing the unwanted discharge of hot moist air from these locations.

On page 7 of the Office Action, the Examiner characterizes Eberhardt as teaching a conveyor dishwasher in which "the exhaust-air stream is produced [in] the dishwasher counter to the transporting direction of the wash ware through the dishwasher by regulated action on flow from the drying zone and/or the washing zone." In the next paragraph, the Examiner says, "EBERHARDT does not appear to explicitly/expressly disclose the exhaust air stream moving counter to the direction of the conveyor, where said stream is produced by regulated action in the drying and/or washing zone."

As shown, for example, in drawing figure 1 of Eberhardt, the only flow of air in the dishwasher is generated in dryer chamber 108, where motor-driven fan 114 draws in outside air through an inlet. The air is heated by electric heater 112 and passes downwardly onto the cleaned wash ware. A baffle structure 118 positioned below the advancing wash ware deflects the heated air upwardly through the wash ware at a point further downstream in the direction of conveyor travel. That is, the flow of air produced by the fan 114 moves *in the same direction* as the travel of the wash ware through the dishwasher. There is no disclosure in Eberhardt, either implicit or

explicit, of an exhaust-air stream that flows in a direction counter to the travel direction of the wash ware.

The Examiner cites Metzger as disclosing "a substrate drying apparatus (element 10 of figure 1) where the exhaust stream (air flow shown by arrow B and multiple internal arrows in figure 1), flows counter to the direction of the conveyor (conveyor direction shown by arrow A in figure 1). Said stream is regulated by the action of a motor driven fan (element 28 of figure 1) and a controllable damper (damper action discussed in lines 36-40 of column 3)."

The Examiner contends, "At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT to include the regulated counter exhaust stream of METZGER, since air flow moving counter to the conveyor serves to move air containing volatiles (such as water vapor) from areas of lower volatile concentration towards areas of higher volatile concentration, which facilitates increased drying action, as taught by METZGER (lines 29-44 of column 3)."

Metzger discloses an apparatus and method for drying and curing coatings on substrates. The coated substrates lie flat while being conveyed through the apparatus, whereas in a conveyor dishwasher, many of the wash ware items are in a standing orientation. Applicant submits that the invention disclosed by Metzger is non-analogous prior art and offers no teachings that would be recognized by one of ordinary skill in the art as obviously applicable to conveyor dishwashers generally, much less to the dishwasher disclosed by Eberhardt.

On page 4 of the Office Action, the Examiner states, "METZGER is concerned with the problem of drying a substrate which is reasonably pertinent to the dish drying problem concerning the applicant." In Applicant's disclosed and claimed dishwasher, drying is not the only operation performed. Washing and rinsing operations that produce heat and moisture also occur and must be accommodated. In Applicant's disclosed and claimed dishwasher, disadvantageous effects of the heat and moisture produced are minimized by the exhaust-air flow that moves in a direction counter to the transporting direction of the wash ware. The teachings in Metzger are simply not relevant to conditions prevailing in a conveyor dishwasher, and Applicant submits that Metzger must be viewed as non-analogous prior art that is not obviously applicable to the dishwasher taught by Eberhardt.

In the Eberhardt dishwasher the only forced air flow is produced by fan 114, which is located in the drying chamber 108 located adjacent to the exit end of the dishwasher. Without the fan 114, there would be no forced air flow through the dishwasher. As noted above, the air flow produced by fan 114 moves in the same direction as the travel of the wash ware through the dishwasher. With the modification of the Eberhardt dishwasher proposed by the Examiner, the air would flow in the opposite direction. This proposed modification would entail a major redesign of the Eberhardt dishwasher and would violate the explicit teachings in the Eberhardt patent. The resulting dishwasher would not be recognizable as a dishwasher constructed according to the teachings provided by Eberhardt and would not perform as intended.

On page 4 of the Office Action, the Examiner says, "Adding counter-flow air circulation to the dishwasher of EBERHARDT would not prevent this dishwasher from fulfilling its stated purpose of washing dishes, as none of the washing processes of EBERHARDT would be substantially affected by this air circulation." Drying of the dishes is also a function performed in the Eberhardt dishwasher. If the Eberhardt dishwasher were modified as proposed by the Examiner, the drying of the dishes would not be carried out in the manner explicitly disclosed by Eberhardt,

The modification of the Eberhardt dishwasher proposed by the Examiner would be at odds with the guidelines presented in MPEP 2143.01 V and cannot be reasonably regarded as one that would have been obvious. Applicant therefore submits that the dishwasher recited in Applicant's independent claim 1 and in dependent claims 2, 7-9 is not made obvious by the disclosures in Eberhardt and Metzger.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in Eberhardt and Metzger can properly serve as a basis for rejecting any of claims 1, 2, 7-9 and 11 under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

PRIOR ART REJECTION II

Claims 3, 4, 6, 12 and 13 were rejected under 35 USC § 103(a) as being unpatentable over Eberhardt in view of Metzger and further in view of US 2003/0233767 A1 (Fratello et al.). Applicant traverses this rejection.

The Examiner acknowledges that Eberhardt and Metzger "do not appear to explicitly/expressly disclose the drying fan including pivotably designed exit nozzles" and cites Fratello et al. for its disclosure of "a blower dryer for a carwash which includes a drying fan with a rotatable nozzle (abstract)." The Examiner contends, "At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT and METZGER to include the drying fan with rotatable nozzle of FRATELLO ET AL., since the directed nozzle serves to better push liquid particles toward the side or end of items being washed, thus enhancing the drying process as taught by FRATELLO ET AL. (abstract)."

For reasons presented above, the requirements of independent claim 1 are not made obvious by the disclosures in Eberhardt and Metzger. Fratello et al. offers no disclosure that could remedy deficiencies in the proposed Eberhardt-Metzger apparatus vis-à-vis the requirements of parent claim 1.

As acknowledged by the Examiner, Fratello et al. discloses rotatable nozzles *used in a car wash*. There is little reason to think that one of ordinary skill in the art would look to the car wash art for teachings that would be applicable to the design of a dishwasher. Applicant therefore submits that combining the teachings in Fratello et al. with the teachings in Eberhardt and Metzger, as proposed by the Examiner, would not have been obvious. Furthermore, even if the teachings were so-combined, no dishwasher resulting from such a combination could meet the requirements of Applicant's claims.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in Eberhardt, Metzger and Fratello et al. can properly serve as a basis for rejecting any of claims 3, 4, 6, 12 and 13 under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

PRIOR ART REJECTION III

Claim 5 was rejected under 35 USC § 103(a) as being unpatentable over Eberhardt in view of Metzger and Fratello et al. and further in view of US 3598131 (Weihe). Applicant traverses this rejection.

The Examiner acknowledges that Eberhardt, Metzger and Fratello et al. "do not appear to explicitly/expressly disclose the dishwasher being operated without clouds of steam at the inlet and outlet." The Examiner cites Weihe for its disclosure of "two steam collection systems for a dishwasher which prevent clouds of steam from being ejected at the inlet and outlet by pulling the steam into the heat recovery systems (lines 6-14 of column 3)." The Examiner adds, "At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT, METZGER and FRATELLO ET AL. to include the steam collection systems of WEIHE, since these devices recover the heat of condensation and reduce the humidity in the dishwasher room, as taught by WEIHE (abstract)."

As argued above, the teachings in Eberhardt, Metzger and Fratello et al. cannot make obvious the requirements of parent claim 4. Weihe provides no teachings that can remedy deficiencies in the Eberhardt, Metzger and Fratello et al. teachings vis-à-vis the requirements of claim 4. So, without acquiescing in the Examiner's proposal to combine the teachings in Weihe with those in Eberhardt, Metzger and Fratello et al., Applicant submits that no dishwasher resulting from such a combination could meet the requirements of claim 5.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in Eberhardt, Metzger, Fratello et al. and Weihe can properly serve as a basis for rejecting claim 5 under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

PRIOR ART REJECTION IV

Claim 10 was rejected under 35 USC § 103(a) as being unpatentable over Eberhardt in view of Metzger and Weihe. Applicant traverses this rejection.

Claim 10 was rejected under 35 USC § 103(a) as being unpatentable over Eberhardt and Metzger and further in view of Weihe. Applicant traverses this rejection.

Claim 10 depends from claim 1. For reasons made evident in the discussion above, the disclosure in Weihe cannot remedy deficiencies in the disclosures in Eberhardt and Metzger vis-à-vis the requirements of independent claim 1. Therefore no dishwasher resulting from a combination of Eberhardt and Metzger and Weihe could meet the requirements of claim 10.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in Eberhardt, Metzger and Weihe can properly serve as a basis for rejecting claim 10 under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

PRIOR ART REJECTION V

Claim 14 was rejected under 35 USC § 103(a) as being unpatentable over Eberhardt in view of Metzger and Weihe and further in view of SE 9503485 (Andersson). Applicant traverses this rejection.

The Examiner cites Andersson for its disclosure of "a ventilation control system which utilizes a speed regulated fan." The disclosure in Andersson cannot remedy deficiencies in the disclosures in Eberhardt, Metzger and Weihe vis-à-vis the requirements of parent claim 1, for reasons made evident in the discussion above. Accordingly, no dishwasher resulting from a combination of Eberhardt, Metzger, Weihe and Andersson could meet the requirements of claim 14.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in Eberhardt, Metzger, Weihe and Andersson can properly serve as a basis for rejecting claim 14 under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

PRIOR ART REJECTION VI

Claims 15 and 16 were rejected under 35 USC § 103(a) as being unpatentable over Eberhardt in view of Metzger and further in view of US 3896827 (Robinson). Applicant traverses this rejection.

As amended herein, claim 15 depends from claim 3.

On page 15 of the Office Action, the Examiner acknowledges that "EBERHARDT and METZGER do not appear to explicitly expressly disclose a fan or air nozzles being controlled based on a sensed temperature, moisture content, or presence of wash ware."

The Examiner cites Robinson for its disclosure of "a dishwashing machine that senses the presence of dishes, water temperature, water pressure, and detergent concentration to control the washing process (abstract, lines 1-35 of column 2)." The Examiner adds, "At the time of the

invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT and METZGER to apply the control teachings of ROBINSON to a fan or air nozzle, since one of skill in the art at the time of the invention would have known that the use of automatic control, in response to sensor or user input, was commonly used in the dishwasher art to control washing, rinsing, sanitizing, and drying processes."

For reasons presented above, the requirements of independent claim 1 are not made obvious by the disclosures in Eberhardt and Metzger. Without acquiescing in the Examiner's proposal to modify the proposed Eberhardt-Metzger dishwasher, Applicant observes that Robinson offers no disclosure that could remedy deficiencies in the proposed Eberhardt-Metzger apparatus vis-à-vis the requirements of parent claim 1. Thus, even if the Eberhardt-Metzger dishwasher were modified as proposed by the Examiner, no dishwasher resulting from the modification could meet the requirements of claim 1 and dependent claims 15 and 16.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in Eberhardt, Metzger and Robinson can properly serve as a basis for rejecting either of claims 15 and 16 under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

CONCLUSION

In view of the amendments, observations and arguments presented herein, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections stated in the outstanding Office Action and recognize all of the pending claims as allowable.

If unresolved matters remain in this application, the Examiner is invited to contact Frederick R. Handren, Reg. No. 32,874, at the telephone number provided below, so that these matters can be addressed and resolved expeditiously.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

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